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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,299	09/08/2003	Takaji Numao	1035-467	8671

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EXAMINER

EISEN, ALEXANDER

ART UNIT	PAPER NUMBER
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2629

DATE MAILED: 04/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/656,299

Applicant(s)

NUMAO, TAKAJI

Examiner

Alexander Eisen

Art Unit

2629

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 is/are allowed.
- 6) ☒ Claim(s) 8-13 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/8/03;7/27/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. Figures 23-26 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 8 is objected to because of the following informalities: claim recites: "a **fourth** set of lines", but there was no a third set claimed, so that line probably should read – a **third** set of lines -.
4. In view of required amendment to claim 8, claim 12 now instead of "**the** fourth set of lines" should read - - a fourth set of lines - -. It is believed that claim 8 is related to the fourth embodiment in FIG. 9 and claim 12 is related to the improved fourth embodiment in FIG. 13. As can be seen from these figures a third set of lines W_i is connected to control terminals of the first switching devices Q_1 and a fourth set of lines E_i is connected to control terminals of the second switching devices Q_2 . The disclosure calls the set W_i "a fourth set of lines" on several occasions

Art Unit: 2629

in reference to figures 9 and 13, and then calls the set Ei “a fourth set of lines” on page 58 in reference to figure 14. It is noted that there are only three sets of lines in figure 9, so it is only makes sense to call Wi a third set and Ei a forth set in order to have consistency. Otherwise “a fourth se” in parent claim 8 would

5. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 8-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Koyama, US 6,661,180 B2.

With respect to claim 8 Koyama discloses a display 100 in FIG. 1, comprising electro-optic devices (OLED pixels 216 in FIG. 9) provided at intersections of a first set of lines (source lines Si) and a second set of lines Gbj; first active devices Tr1 provided in series with the electro-optic devices 216; first capacitors 215 connected to control terminals (gates) of the first active devices Tr1; second active devices Tr3 provided between the first set of lines Si and the first capacitors 215; first switching devices Tr4 provided between the first set of lines Si and current output terminals D of the first active devices (drain of Tr1); and a fourth (third) set of lines Gaj connected to control terminals of the first switching devices.

Art Unit: 2629

In regards to claim 9 Koyama discloses a display 100 (FIG. 1), comprising (FIG. 9) electro-optic devices 216 provided at intersections of a first set of lines Si and a second set of lines Gbj; a third set of lines Vi provided in parallel with the first set of lines Si; first active devices Tr1 provided in series with the electro-optic devices 216; first capacitors 215 connected to control terminals G (gates) of the first active devices; second active devices Tr5 provided between the third set of lines Vi and the first capacitors 215; and first switching devices Tr4 provided between the first set of lines Si and current output terminals D (drains) of the first active devices Tr1.

As pertaining to claim 10, Koyama further discloses second switching devices Tr2 provided between the electro-optic devices 216 and the first active devices Tr1 (see FIG. 9).

As pertaining to claim 11, Koyama further discloses a second switching device (Tr2 in FIG. 9) provided between the electro-optic devices 216 and the first active devices Tr1.

As pertaining to claim 12, Koyama further discloses that the fourth set of lines Gaj is connected to the control terminals G (gates) of the second switching devices Tr2 (see also FIG. 9).

As pertaining to claim 13, Koyama also discloses that the fourth set of lines Gaj is connected to the control terminals G (gates) of the second switching devices Tr2.

Allowable Subject Matter

8. Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2629

9. The following is a statement of reasons for the indication of allowable subject matter:

none of the references, either singly or in combination, teach or fairly suggest a display, comprising electro-optic devices provided at intersections of a first set of lines and a second set of lines; a third set of lines provided in parallel with the first set of lines; first active devices provided in series with the electro-optic devices; first capacitors connected to control terminals of the first active devices; second active devices provided between the third set of lines and the first capacitors; and first switching devices provided between the first set of lines and current output terminals of the first active devices; and further comprising second capacitors connected to the third set of lines; third switching devices provided between the third set of lines and a first set of voltage lines; fourth switching devices provided between the second capacitors and the first set of lines, the fourth switching devices being opposite to the third set of lines with respect to the second capacitors; and fifth switching devices provided between the second capacitors and a second set of voltage lines, the fifth switching devices being opposite to the third set of lines with respect to the second capacitors.

10. Claims 1-7 are allowed.

11. The following is an examiner's statement of reasons for allowance: none of the prior art has been found that suggested a modification of or a combination with the cited prior art so as to arrive to a combination of the limitations of the independent claims 1 and 7; none of the prior art teaches or suggests a display, comprising pixels provided at intersections of a first set of lines and a second set of lines, the pixels including respective current-driven electro-optic devices; driver circuits which drive control the pixels through the first set of lines during a drive controllable period during which the pixels are drive controllable according to voltage states of

Art Unit: 2629

the second set of lines; and a single constant current source, wherein the driver circuits generate a drive current to current drive the electro-optic devices and pass the drive current to the pixels through the first set of lines during the drive controllable period so as to drive control the pixels; create, and maintain, a circuit state where the drive current flows through the driver circuits to the pixels, using a constant current output from the constant current source during a non-drive controllable period; and generate the drive current during the drive controllable period in the maintained circuit state.

Sempel et al., US 6,509,690 B2, discloses a display driving arrangement using a single current source.

Akimoto et al., US 6,876,345 B2, discloses a display comprising three sets of lines, capacitors, active devices and switches.

Osame et al., US 2003/0160745 A1, discloses light emitting device structure and method of driving the same similar to that of the invention.

None of the above discloses a particular structure and interaction of the components as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Eisen whose telephone number is (571) 272-7687. The examiner can normally be reached on M-F (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 Alexander Eisen
Primary Examiner
Art Unit 2629

20 March 2006